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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/635,782	08/11/2000	Donald S. Forsyth	50495-1	9627

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NATIONAL RESEARCH COUNCIL OF CANADA
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EXAMINER

LUDLOW, JAN M

ART UNIT	PAPER NUMBER
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1743

DATE MAILED: 10/30/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/635,782

Applicant(s)

FORSYTH, DONALD S.

Examiner

Jan M. Ludlow

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE three MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 August 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters; prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 7-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 7-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 August 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1- 5, 7-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pawliszyn in view of Murphy.

Pawliszyn teaches a vial containing a sample and sealed with a septum having a syringe inserted therein with a sorbent fiber as claimed extending from a protective needle into the vial to sorb analytes (see, e.g., abstract lines 10-13, col. 7, lines 33-53). The sorbent is retracted into the needle and desorbed in the inlet of a gas chromatograph, i.e., into a gaseous solvent (col. 4, lines 45-50). In addition, the method can be used to extract analytes for analysis by liquid chromatography, flow injection analysis (col. 7, lines 62-67).

Pawliszyn fails to teach chemical desorption or desorption into a "micro volume".

Murphy teaches a device similar to that of Pawliszyn, except that the sorbent is coated on the interior of the needle, not on a fiber within the needle. Desorption can be thermal or chemical, and the chemical desorption is accomplished by drawing only enough solvent to cover the sorbent phase into the needle (col. 2, lines 21-48 and elsewhere), suggesting the instant "microvolume" (see, e.g., col. 4, line 4 and applicant's argument filed March 15, 2002).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to insert the needle of Pawliszyn in a solvent bottle, draw a microvolume of solvent into the needle and inject the desorbed analytes into an analyzer as an alternative to thermal desorption of analytes sorbed in a needle carrier as taught by Murphy. It would have been obvious to use a "microvolume" in order to use a very small volume as taught by Murphy.

4. Claims 1-3, 5, 10, 14-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murphy.

5. Murphy teaches a coated needle for insertion into a vial to adsorb sample followed by drawing up a small volume of solvent to release the adsorbed analytes for injection into an analytical device (col. 2, lines 21-48 and elsewhere).

6. Murphy failed to explicitly teach that the sample vial is sealed or that a microvolume is used.

7. It would have been obvious to one of ordinary skill in the art at the time the invention was made to seal the sample vial of Murphy in order to prevent evaporative loss of analyte as was known in the art. It would have been obvious to use a

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"microvolume" in order to use a very small volume as taught by Murphy. It would have been further obvious to use known sorbents for their known sorbing function.

8. Applicant's arguments filed August 22, 2002 have been fully considered but they are not persuasive.

9. Applicant argues that Murphy does not teach "gas-tight enclosure means" but the instant "gas tight enclosure means" is nothing more than a traditional sample vial with a septum-containing lid. See instant figure 4 and page 5, lines 16-18, where applicant describes the use of commercially available sample vials. Murphy also teaches a traditional sample vial. While not explicitly teaching a lid to seal the vial, it would have been obvious to provide a lid with a septum in order to prevent evaporative loss of sample and provide needle access as would have been obvious to one of ordinary skill. Standard sample vials for chromatographic samples have a rubber septum held in place by a screw cap or crimp fitting. The examiner has personally crimped hundreds, if not thousands, of them. The vials shown by Murphy have a flat lip for placement of such a septum, the septum being trapped between the lid and lip to provide a gas tight seal, but are not explicitly described as having such a septum and lid, probably because such a lid is so conventional as to be immediately understood by one of ordinary skill in the art. Applicant argues that "all of these devices" (which devices?) rely on establishing equilibrium conditions for extraction, whereas Murphy cannot do so based on headspace sampling. First, with respect to the apparatus claims, this argument is directed to intended use. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order

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to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). Second, Murphy teaches equilibrium (col. 2, line 29) using direct sampling, which is alternatively recited in instant claim 1, last line. With respect to the method claims, only claim 12 recites a gas tight enclosure, which is obvious as explained above. Applicant argues that Murphy cannot use head-space sampling, but this is again directed to intended use, not a structural limitation, and the instant apparatus is not limited to means for head space sampling since that intended use is recited in the alternative. The instant method claims do not recite headspace sampling.

10. Applicant argues that the instant invention can use multiple fibers, but the claims are not so limited. Applicant argues that Murphy does not teach a "microvolume" of solvent, but does not address the obviousness of using a "microvolume" in that Murphy teaches a very small volume. Applicant argues that the instant invention is not "equivalent" to Murphy, but the examiner has not argued that it is. The instant invention is obvious over Murphy. With respect to "means for shielding the support from the atmosphere," the disclosed structure corresponding to this means is a piece of stainless steel tubing (see, e.g., page 5, lines 6-7) surrounding the adsorbent. A needle having adsorbent coated on the interior thereof, as taught by Murphy, is also a tube

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surrounding the adsorbent and needles are typically made of stainless steel. Thus, Murphy teaches or suggests the instant means.

11. Applicant argues that Murphy does not remedy the deficiencies of Pawliszyn because Murphy teaches solvent desorption in conjunction with thermal desorption whereas the instant invention uses solvent desorption as an essential feature.

However, Murphy teaches that the desorption of analytes into the solvent occurs prior to injection in the GC (col. 2, lines 43-44 and 46-48), which the examiner presumes to be the thermal desorption referred to by applicant (applicant did not cite any specific portion of Murphy supporting applicant's position). Further, the instant claims do not preclude heating during desorption.

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

13. CA02300411, submitted by applicant, additionally teaches chemical desorption from a small solid phase extraction device introduced in a sealed vial to extract analytes (p. 5, line 20- p. 6, line 5).

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jan M. Ludlow whose telephone number is (703) 308-4039. The examiner can normally be reached on Monday-Thursday, 11:30 am - 8:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill A. Warden can be reached on (703) 308-4037. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



Jan M. Ludlow
Primary Examiner
Art Unit 1743

jml
October 29, 2002